

# Intracranial Aneurysm Treatment Outcome

see also [Aneurysmal Subarachnoid Hemorrhage Outcome](#).

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The [COVID-19 pandemic](#) greatly disrupted the national [healthcare system](#) in [Poland](#), resulting in the implementation of new [protocols](#) allowing only patients with severe diagnoses to receive immediate treatment. Given that an [intracranial aneurysm](#) (IA) is regarded as one of the most severe diagnoses, Miękisiak et al. planned to assess whether the current protocol has successfully provided the standard [intracranial aneurysm treatment](#).

Data on all IA cases treated from 2015 to 2020 was extracted from the JGP (a homogeneous group of patients) catalog provided by the National Health Index of Poland (NFZ, Narodowy Fundusz Zdrowia). Poisson regression was used to determine the significance of the change in hospital admissions, and differences between proportions were analyzed using the “N-1” Chi-squared test.

A total of 21,801 IA patients treated during 2015-2020 were included in this study. The overall number of [hospitalizations](#) due to IAs fell in the open surgery group, but not in the endovascular cohort. Mortality rates following IA treatment increased significantly by 21% in 2020 compared to preceding years. The demographics changed as well; the patients were significantly younger during the pandemic.

The findings show that the current strategy for optimal care for patients diagnosed with IAs in Poland during the pandemic is failing to maintain high-quality treatment. New methods to improve the current plan should be implemented to address future crises <sup>1</sup>.

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Fennell et al. conducted a retrospective analysis of a large national database, the [University HealthSystem Consortium](#), that was queried in the years 2009-2013. Cases of both unruptured cerebral aneurysms and subarachnoid hemorrhage treated by endovascular obliteration were studied. Outcome measures of morbidity and mortality were evaluated according to the specialty of the treating physician.

Elective embolization of an unruptured aneurysm was the procedure code and primary diagnosis, respectively, for 12,400 cases. Patients with at least 1 complication were reported in 799 cases (6.4%). Deaths were reported in 193 cases (1.6%). Complications and deaths were varied by specialty; the highest incidence of complications (11.1%) and deaths (3.0%) were reported by neurologists. The fewest complications were reported by neurosurgeons (5.4%; 1.4% deaths), with a higher incidence of complications reported in cases performed by neurologists ( $p < 0.0001$  for both complications and deaths) and to a lesser degree interventional radiologists ( $p = 0.0093$  for complications). Subarachnoid hemorrhage was the primary diagnosis and procedure for 8197 cases. At least 1 complication was reported in 2385 cases (29%) and deaths in 983 cases (12%). The number of complications and deaths varied among specialties. The highest incidence of complications (34%) and deaths (13.5%) in subarachnoid hemorrhage was in cases performed by neurologists. The fewest complications were in cases by neurosurgeons (27%), with a higher incidence of complications in cases performed by neurologists (34%,  $p < 0.0001$ ), and a trend of increased complications with interventional radiologists (30%,  $p < 0.0676$ ). The lowest incidence of mortality was in cases performed by neurosurgeons (11.5%), with a significantly higher incidence of mortality in cases

performed by neurologists (13.5%,  $p = 0.0372$ ). Mortality rates did not reach statistical significance with respect to interventional radiologists (12.1%,  $p = 0.4884$ ).

Physicians of varied training types and backgrounds use endovascular treatment of ruptured and unruptured intracerebral aneurysms. In this study there was a statistically significant finding that neurosurgically trained physicians may demonstrate improved outcomes with respect to endovascular treatment of unruptured aneurysms in this cohort. This finding warrants further investigation <sup>2)</sup>.

## Recurrent aneurysm

[Recurrent aneurysm](#)

## Cognitive outcome after Intracranial Aneurysm Treatment

[Cognitive outcome after Intracranial Aneurysm Treatment.](#)

<sup>1)</sup>

Miękisiak G, Fercho J, Pettersson SD, Szmuda T, Słoniewski P. Impact of COVID-19 on incidence and treatment of intracranial aneurysms in Poland: a national study. *Neurol Neurochir Pol.* 2022 Jan 11. doi: 10.5603/PJNNS.a2022.0006. Epub ahead of print. PMID: 35014691.

<sup>2)</sup>

Fennell VS, Martirosyan NL, Palejwala SK, Lemole GM Jr, Dumont TM. Morbidity and mortality of patients with endovascularly treated intracerebral aneurysms: does physician specialty matter? *J Neurosurg.* 2016 Jan;124(1):13-7. doi: 10.3171/2014.11.JNS141030. Epub 2015 Aug 14. PubMed PMID: 26274987.

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